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work is beautifully, indeed lavishly, illustrated with seventy-eight plates, of which thirty-one are colored, nearly every plate representing a distinct species highly magnified. The work will commend itself to microscopists, as it is accompanied by an essay, by Mr. Joseph Beck, on the scales of certain Podura, with figures of the scales highly magnified.

BOTANY.

IRRITABILITY OF THE LEAVES OF THE SUNDEW.—In our last number attention was called to the old observations of Roth respecting the irritability of Drosera leaves. It will be interesting to our readers to glance at a short abstract of Roth's treatise.*

The author begins by referring to the difficulty of drawing any line of demarcation between animals and plants. Some plants were believed, by the ancient philosophers, to possess a soul, since they appear to share with animals a kind of sensitiveness and motion. The word *sensitiveness* is, on some accounts, objectionable and it may be better, therefore, to employ the term *irritability*. A few plants possess this irritability in a high degree, but may we not ascribe to others, irritability less in degree? The author next refers to the kindred plants *Dionœa muscipula* and *Drosera*, intimating that the latter has, in a slight degree, the kind of irritability which characterizes the flytrap. He then describes the action of Dionæa in catching insects, and proceeds to give an account of the two more common species of sundew, *Drosera rotundifolia* and *longifolia*.

In July, 1779, while on a botanical excursion, Roth observed that some leaves of both species of Drosera had closed. Upon separating the infolded surfaces, he discovered dead insects, whereupon he asked himself whether sundew did not act just as Dionæa does. He transferred healthy plants to his house and proceeded to make the following experiments:—

1st. He placed, by a pair of pincers, an ant on the open leaf of *Drosera rotundifolia*. As soon as the ant tried to recover its freedom, the hairs of the leaf turned towards his body, and the edges of the leaf rolled over towards him. In a few minutes the ant was concealed in the infolded leaf. The insect was killed by this imprisonment. This experiment was repeated upon other leaves and with nearly the same results.

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*Von der Reizbarkeit der Blätter des sogenannten Sonnenthaues (Drosera rotundifolia, longifolia.) Beyträge zur Botanik, Erster theil. s. 60. Von Albrecht Wilhelm Roth. Bremen, 1782. On the Irritability of the Leaves of the so-called Sundew (Drosera rotundifolia). p. 60. By Albrecht Wilhelm Roth. 1782.

2nd. He placed a little fly, being careful not to injure it, on a leaf of *Drosera rotundifolia*. The insect made some movements to gain his liberty, but he soon died, as did the ants in the previous experiments. The hairs bent inwards as before. The experiment began at eleven A. M. At five o'clock P. M. the leaf had completely closed and held the fly within.

The third observation was made upon a specimen of *Drosera longifolia*. An ant was employed, and with the same results as before. It is interesting to note the following on p. 64:—"Dieses Zusammenklappen erfolgt aber auch ebenso wenn man ein Strohhälmchen oder eine Stecknadel zwischen dieselben bringt."

The author makes some remarks relative to the similarity of action in the two genera, Dionæa and Drosera. The most interesting note, however, is that in respect to the *purpose* of the irritability.

"Mr. Ellis suggests in his letter to Linnæus that nature, by the formation of the leaf of Dionæa, may perhaps have designed it to aid in its nourishment. Schreber, however, believes it is unlikely that plants should draw nourishment from insects pressed between their leaves. It is certain that we cannot determine positively what object the wise Creator may have had in giving to these plants this wonderful structure and irritability, but I believe that we may assume safely that this structure and faculty of these plants may tend, through this nourishment, to the preservation and propagation of their kind. We cannot yet determine whether these plants may not need for their support animal juices. Besides, knowing as we do that these plants have, chiefly on their leaves, an apparatus by which they may draw from the air foreign bodies for their nourishment, we have no reason to doubt this possibility."

The author claims that no one had preceded him in this investigation.

In 1802, Roth published the following note (Neue Beyträge zur Botanik, von Al. W. Roth. Erster Theil. Frankf. am Mayn. 1802. p. 185). "In Droseris Germanicis simile phænomenon observatur et non minus miraculosum, quam in Dionæa muscipula, Foliorum scilicet pili apice oriferi ab Insecto irritati inflectuntur, inflexi Insectum incarcerant, et folium demum complicatum incarceratum tenet."

Passing over the statements in De Candolle's "Introduction à l'étude de la Botanique" (Tome 1, p. 415) 1835; in Treviranus' Physiologie der Gewächse (1838, vol. ii, s. 759), in Meyen's Neues System der Planzen Physiol. vol. iii, s. 550, we find in Botanische Zeitung, June 29, 1860, an article by Nitschke, detailing an extensive series of experiments upon Drosera. These results, together with the very curious observations published in Comptes Rendus last year, we will present at an early day, feeling quite confident that many of our readers will carefully repeat some of these experiments during the coming season.—G. L. G.

ZOOLOGY.

A NEW ÆGERIAN MAPLE BORER.—Last June my attention was drawn to numerous castings, similar to those of the peach tree borer (*Trochilium exitiosum* Say) projecting from the trunk of the soft maple trees surrounding our university yard. Having approached one of these trees I found several moths already hatched out, the most of the maple trees having been destroyed by this pernicious insect, which, boring in the bark and sap-wood, not only hinders the sap from circulating, but also enfeebles the trunk so that it is no longer able to support the weight of its foliage.

During this summer a dozen of these trees were broken down, and the few still standing are in such a condition that I believe they will not resist the winds of a second season. This condition of things induced me to pay close attention to this insect—studying its habits and collecting specimens. I failed to find it described in any of the entomological works of the university library and I have been informed that Dr. Le Baron, State Entomologist, was not aware of any Ægerians feeding on the maple tree.

My confidence in this second statement having been reënforced by a similar answer of several men of experience that I consulted on the matter, I came to the conclusion that this insect is a new destroyer and enemy of our best shade tree. I therefore give you a description* of this insect, adding what I could observe on its

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*TROCHILIUM ACERICOLUM, n. sp. The female, the perfect insect of this Ægeria, measures across the wings from 13-16 to 15-16 of an inch; its wings are transparent. FORE WINGS; the tips yellowish, opaque, with black veins; front margin and fringe black; a steel-blue transverse band beyond their middle. HIND WINGS with a steel-